

Surfactant wound irrigation for the treatment of staphylococcal clinical isolates.

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Deep wound infection involving an implanted biomaterial is a devastating complication in orthopaedic surgery. Two-thirds of such infections are monomicrobial and the most commonly isolated bacteria in human osteomyelitis and orthopaedic device infection are *Staphylococcus aureus* and *Staphylococcus epidermidis*. The purpose of the current study was to examine the effectiveness of the previously reported sequential surfactant irrigation protocol against human-isolated clinical strains of *Staphylococcus aureus* and *Staphylococcus epidermidis* in the rat model of orthopaedic implant contamination. The infectivity rate of human-isolated clinical strains of *Staphylococcus aureus* in a contaminated complex orthopaedic wound was reduced effectively by a sequential surfactant irrigation protocol. Also, in this model, the infectivity of *Staphylococcus epidermidis* was reduced by normal saline irrigation alone when compared with no irrigation. Therefore, the sequential surfactant irrigation protocol may represent an effective method of wound irrigation in monomicrobial *Staphylococcus aureus* orthopaedic implant contamination, and normal saline irrigation may suffice in cases of monomicrobial *Staphylococcus epidermidis* contamination. Additional studies are necessary to determine the clinical use of surfactant irrigation.

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